



Goddard Space
Flight Center

GSFC HP Program Source Inventory Database

Dan Simpson

Radiation Safety Officer

Goddard Space Flight Center (GSFC)

Daniel.S.Simpson@nasa.gov

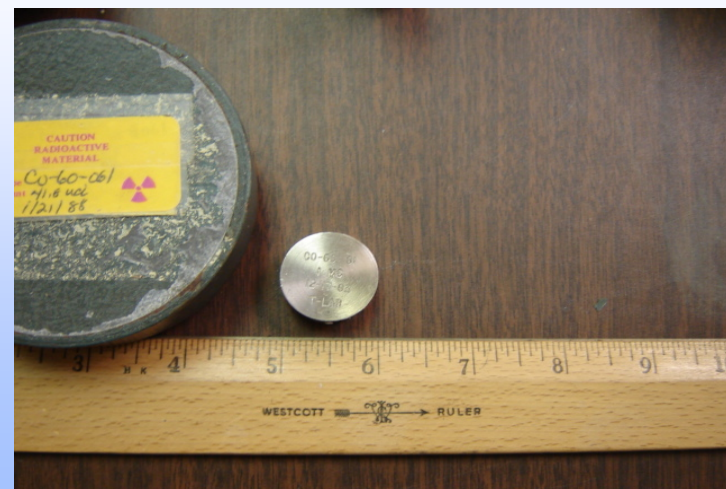


Radiation Protection Office (RPO) Code 250.2

- Ensures GSFC remains in compliance with our two Nuclear Regulatory Commission (NRC) radioactive material licenses



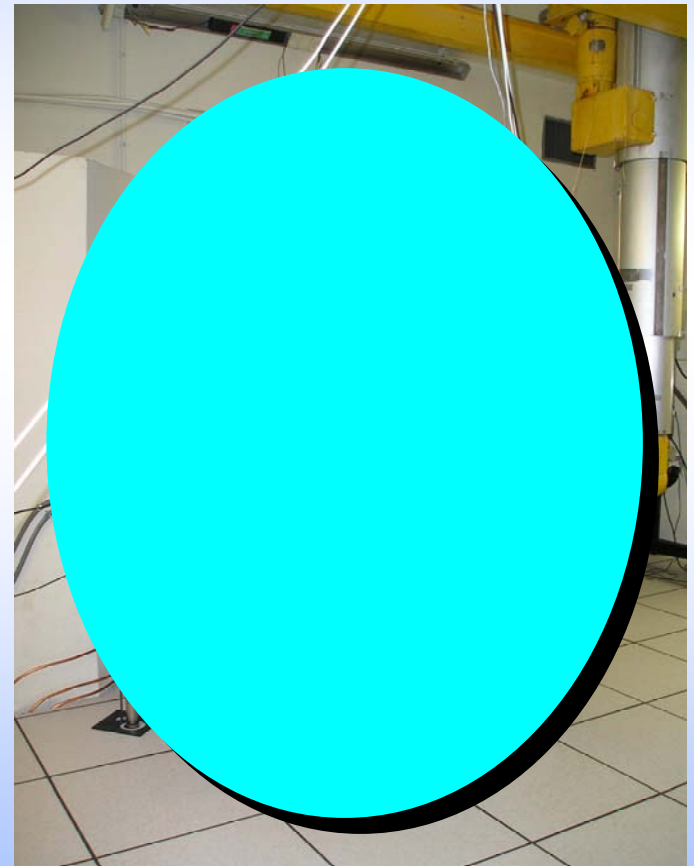
Source: Armed Forces Radiobiology Research Institute (AFRRI)





Radiation Effects Facility

- **Type of Source Being Used**
- **INCREASED CONTROLS**





Radiation Protection Office (RPO) Code 250.2



- v Supports GSFC Projects by:
 - u Shipping, Receiving, and Transfer of Radioactive Sources
 - u Inspection and Survey of Source Use Areas
 - u Radioactive Waste Disposal and Source Storage
 - u Maintenance, Repair, & Calibration of Radiation Detection Instruments
 - u Inventory of Radioactive Sources



Radiation Protection Office (RPO) Code 250.2

- v Actively providing radiological support for the Lunar Exploration Neutron Detector (LEND) project and Comic Ray Telescope for the Effects of Radiation (CRaTER) project, which will be flown on the Lunar Reconnaissance Orbiter spacecraft.





RS Solutions Database





RS Solutions Database

File Edit Records Tools Window RS Solutions Help

Close Print Find Main Menu Exit ?

Authorized User Menu

Select Type: Select Authorized User: View: ☒ Active ☐ Inactive ☐ All

General Information

	Radiation Workers	
	Equipment	
	Laboratories	
	Violations	
	Holds	
	License Conditions	

Inventory

	Radioactive Materials	
	X-Ray Machines	

Authorized Limits

	By AU	
--	-------	--

Select Isotope:

	By Isotope	
--	------------	--

Miscellaneous

Add New	Edit Info
Deactivate	RAM Summary
Expired Authorizations	Email
AU List	Email / Mail All AU

Help

Exit

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Authorized User's Rad Workers

Active Radiation Workers

AU: Bradley, Jung

Name	Phone Number	Email Address	Local Address	Permanent Address
Blackman, Hosoon	(404) 555-4940	Hosoon.Blackman@college.edu	123 Blackman Road Atlanta, GA 30332	123 Hosoon Drive Atlanta, GA 30332
Desai, Jung	(404) 555-8423	Jung.Desai@college.edu	123 Desai Road Atlanta, GA 30332	123 Jung Drive Atlanta, GA 30332
Kropewnicki, Lisa	(770) 555-8909	Lisa.Kropewnicki@college.edu	123 Kropewnicki Road Atlanta, GA 303320230	123 Lisa Drive Tyrone, GA 30290
Marshall, Phillip	(404) 555-8952	Phillip.Marshall@college.edu	123 Marshall Road Atlanta, GA 30332	123 Phillip Drive Atlanta, GA 30309
Wilson, Ying	(404) 555-9509	Ying.Wilson@college.edu	123 Wilson Road Atlanta, GA 30332	123 Ying Drive Atlanta, GA 30332



Workers Training

Expired Training

List of Radiation Workers that require Refresher Training:

<i>Name</i>	<i>Type</i>	<i>Basic Training Lecture Date</i>	<i>Type</i>	<i>Last Refresher Training Lecture Date</i>	<i>Email Address</i>	<i>Phone Number</i>
Alexiou, David	RAM	5/15/97			David.Alexiou@college.edu	(404) 555-2846
Amburgey, Joseph	RAM	7/ 7/94	RAM	1/16/99	Joseph.Amburgey@college.edu	(404) 555-9366
Appiah, Ahmet	X-Ray	7/ 7/94	X-Ray	2/26/99	Ahmet.Appiah@college.edu	(404) 555-6817
Aramis, Kurt	RAM	3/13/91			Kurt.Aramis@college.edu	(404) 555-9365
Bai, Johannes	RAM	11/15/95	RAM	1/16/99	Johannes.Bai@college.edu	(404) 555-3605
Bai, Johannes	X-Ray	11/11/95			Johannes.Bai@college.edu	(404) 555-3605
Barnes, Robert	RAM	8/ 9/94	RAM	1/16/99	Robert.Barnes@college.edu	(404) 555-0339
Batth, Inge	RAM	12/ 3/96			Inge.Batth@college.edu	(404) 555-
Bayer, Cheng	RAM	4/ 8/93			Cheng.Bayer@college.edu	(404) 555-3269
Berta, John	RAM	10/10/96			John.Berta@college.edu	(404) 555-6368
Beydilli, Myrna	RAM	6/29/95			Myrna.Beydilli@college.edu	(404) 555-1854
Biz, Gary	RAM	6/29/95			Gary.Biz@college.edu	(404) 555-0202
Black, Richard	RAM	1/20/94	RAM	1/16/99	Richard.Black@college.edu	(404) 555-0338
Blackman, Hosoon	RAM	10/ 6/94	RAM	1/16/99	Hosoon.Blackman@college.edu	(404) 555-4940
Blaylock, Kevin	RAM	3/25/97			Kevin.Blaylock@college.edu	(404) 555-5956
Chen, Steve	X-Ray	10/ 5/95	X-Ray	2/26/99	Steve.Chen@college.edu	(404) 555-6345
Cheng, Donald	X-Ray	9/ 1/74			Donald.Cheng@college.edu	(404) 555-8517
Chernoff, Thomas	RAM	5/ 2/94			Thomas.Chernoff@college.edu	(404) 555-8419
Chesla, Jesse	RAM	5/ 2/73	RAM	1/16/99	Jesse.Chesla@college.edu	(404) 555-3994





Worker Training Certificates

United States University

This is to certify that

Howell, Edgar

*has attended and satisfactorily passed an examination covering
the contents of 3-hour training program entitled:*

Basic RAM SAFETY

presented by the

Office of Radiological Safety

12/11/96

Training Date

12/11/99

Expiration Date

Radiation Safety Officer



Bioassay Reports

Goddard Space
Flight Center

Bioassay - Radiation Worker

Howell, Edgar

Year: 1999

<i>Sample Date</i>	<i>Sample Time</i>	<i>Reason for sample</i>	<i>Organ</i>	<i>CEDE (mRem)</i>	<i>CDE (mRem)</i>
12/24/99	10:00	Annual	Whole Body	85	85
10/10/99	11:00	Beginning of Employment	Whole Body	0.25	0.25

Committed Effective Dose Equivalent (CEDE) = 85.25 *mRem*

Committed Dose Equivalent, Maximally Exposed Organ (CDE) = 85.25 *mRem*

Year: 2000

<i>Sample Date</i>	<i>Sample Time</i>	<i>Reason for sample</i>	<i>Organ</i>	<i>CEDE (mRem)</i>	<i>CDE (mRem)</i>
3/23/00	8:00	RWP-2000-04	Whole Body	0.15	0.15
3/9/00	9:40	Annual	Whole Body	292	292
2/25/00	14:00	RWP-2000-03	Thyroid	0.15	5000
2/5/00	13:00	RWP-2000-02	Thyroid	0.1	3333
1/10/00	12:00	RWP-2000-01	Whole Body	0.015	0.015

Committed Effective Dose Equivalent (CEDE) = 292.415 *mRem*

Committed Dose Equivalent, Maximally Exposed Organ (CDE) = 8333 *mRem*



Fetal Exposure Records

Fetal Exposure Records

Account Number : 021542

<i>Name</i>	<i>Declaration Date</i>	<i>Conception Date</i>	<i>Badge Number</i>	<i>Series</i>	<i>Period Ending</i>	<i>Fetal Dose (Rem)</i>	<i>Phone Number</i>	<i>Permanent Address</i>		
Alison Almonacil	10/10/99	8/13/99	05499	STU	3/31/00	0.02	(770) 555-1428	123 Alison Drive	Cumming	GA, 30041
Marisa Alou	1/10/00	12/1/99	05466	DEF	6/30/00	0.065	(404) 555-0263	123 Marisa Drive	Atlanta	GA, 30332





Dosimetry Reports

United States University

Radiation Dosimetry Report

Account Number: 021542

Series: JKL

Name	Participant Number	Dosimeter Type	Dosimeter Use	Period Begin date	Period End date	Current (mrem)			Year to Date (mrem)			Lifetime (mrem)		
						DDE	LDE	SDE	DDE	LDE	SDE	DDE	LDE	SDE
Russell Chow-Quan	05459	C1		1/1/00	3/31/00	0	0	0	0	0	0	90	90	90
Russell Chow-Quan	05459	U3		1/1/00	3/31/00			40			40			40
Shelley Ikeda	05472	C1		1/1/00	3/31/00	0	0	0	0	0	0	20	20	20
Anthony Li	05462	C1		1/1/00	3/31/00	0	0	0	0	0	0	70	70	70
Anthony Li	05462	U3		1/1/00	3/31/00			30			30			30
Edna Neff	05460	C1		1/1/00	3/31/00	0	0	0	0	0	0	80	80	80
Edna Neff	05460	U3		1/1/00	3/31/00			40			40			40
Anna Cristina Reyes	05458	C1		1/1/00	3/31/00	0	0	0	0	0	0	70	70	70
Anna Cristina Reyes	05458	U3		1/1/00	3/31/00			0			0			70
Valerie Wright	05461	C1		1/1/00	3/31/00	0	0	0	0	0	0	80	80	80
Valerie Wright	05461	U3		1/1/00	3/31/00			0			0			0



NRC Form 3 Equivalent Reports

United States University Occupational Exposure Record

<u>Series:</u> KLM	<u>Account Number:</u> 032151	<u>Badge Number:</u> 05099
<u>Name:</u> Edgar Howell	<u>SSN:</u> 000-00-0230	<u>Sex:</u> M
<u>E-Mail:</u> Edgar.Howell@college.edu		
<u>Period Ending:</u> 3/31/00	<u>Date of Birth:</u>	<u>Address:</u> 123 Edgar Drive Atlanta GA, 30324

INTAKES				<u>Doses (in REM)</u>	
Radionuclide	Class	Mode	Intake in μ Ci		
				Deep Dose Equivalent (DDE) =	0.010
				Eye Dose Equivalent to the Lens of the eye (LDE) =	0.010
				Shallow Dose Equivalent, Whole Body (SDE-WB) =	0.010
				Shallow Dose Equivalent, Max Extremity (SDE-ME) =	0.000
				Committed Effective Dose Equivalent (CEDE) =	0.292
<u>COMMENTS:</u> Permanent Dose To Date (in REM) DDE = 0.430 SDE-WB = 0.430 LDE = 0.430 SDE-ME = 0.260 TEDE = 0.722				Committed Dose Equivalent, Maximally Exposed Organ (CDE) =	8.333
				Total Effective Dose Equivalent (TEDE) =	0.302
				Total Organ Dose Equivalent, Max Organ (TODE) =	8.343

This form is for use in place of certain reports required by NRC licensees, OSHA and State regulations. It reflects data provided to or by your account and contains information for NRC Form-5 and other equivalent forms.

Signature - Licensee: _____ Date: _____



RS Solutions Database

File Edit Records Tools Window RS Solutions Help

Close Print Find Undo Redo Cut Copy Paste Main Menu Exit ?

Radioactive Materials Menu

Select Source Number: View: ☒ Active ☐ Inactive ☐ All

RAM Inventory

Isotope:

AU:

Building:

Lab:

Physical Form:

Select Authorized User

Last Source Number:

Miscellaneous

Radioactive Decay Calculations

Quarterly Inventory

RAM Orders

Inventory Summary

Help

Exit



Inventory Lists by Authorized User

6/19/00

Active Radioactive Materials Inventory

AU: Storage, Interim

Source Number	Isotope	Half Life (Days)	Assay Date	Physical Form	Description	Initial Activity (mCi)	Activity Used (mCi)	Activity Left (mCi)	Current Activity (mCi)	Storage Location
078-001-00	Cf-249	1.28E+05	1/16/70	Sealed		1.60E-02	0.00E+00	1.60E-02	1.51E-02	Carnegie G-112
078-003-00	Cs-137	1.10E+04	11/4/65	Sealed	Metal pellet	1.00E+03	0.00E+00	1.00E+03	4.51E+02	Carnegie Vault
078-005-00	H-3	4.49E+03	5/31/72	Solid	Neutron Generator Target	4.00E+03	0.00E+00	4.00E+03	8.21E+02	Carnegie G-112
078-006-00	Pu-239	8.81E+06	1/25/71	Liquid		1.14E-03	0.00E+00	1.14E-03	1.14E-03	Carnegie Vault
078-007-00	Np-237	7.82E+08	2/26/65	Sealed		3.53E-01	0.00E+00	3.53E-01	3.53E-01	Carnegie Vault
078-008-00	Pu-239	8.81E+06	2/26/65	Sealed	5 gm	3.07E+02	0.00E+00	3.07E+02	3.07E+02	Carnegie Vault
078-009-00	Ra-226	5.84E+05	11/5/71	Sealed	Inside guage	2.00E-02	0.00E+00	2.00E-02	1.98E-02	Carnegie G-112
078-010-00	Am-241	1.58E+05	11/1/71	Sealed		1.00E+02	0.00E+00	1.00E+02	9.55E+01	Carnegie Vault
078-011-00	U-Depl	1.63E+12	6/8/88	Solid	U-DEPL - (13 lbs)	2.00E-03	0.00E+00	2.00E-03	2.00E-03	Carnegie Vault
078-012-00	Pu-239	8.81E+06	4/23/64	Sealed	7.54 gm	4.62E+02	0.00E+00	4.62E+02	4.62E+02	Carnegie Vault
078-013-00	H-3	4.49E+03	9/11/90	Liquid		5.00E+02	0.00E+00	5.00E+02	2.88E+02	Carnegie G-112
078-014-00	H-3	4.49E+03	9/11/90	Liquid		2.50E+02	0.00E+00	2.50E+02	1.44E+02	Carnegie G-112
078-015-00	Am-241	1.58E+05	5/3/73	Sealed		1.00E+01	0.00E+00	1.00E+01	9.57E+00	Carnegie Vault

Signature: _____

Date: _____

NOTE to the Authorized User:

Please check the accuracy of this quarterly inventory report and make any necessary changes. Sign and date all forms.



Authorized Limits

RAM Inventory Summary

Shaefer, Nolan

<i>Isotope</i>	<i>Physical Form</i>	<i>Current Activity (mCi)</i>	<i>Authorized Limits (mCi)</i>	Δ (mCi)
Cf-252	Sealed	1.97E+01	7.00E+01	5.03E+01
H-3	Sealed	7.59E+03	2.50E+04	1.74E+04
U-235	Sealed	5.32E-02	6.30E-02	9.84E-03
U-Nat	Sealed	1.73E+03	1.73E+03	7.21E-06



Inventory by Source Type

Goddard Space
Flight Center

RADIOISOTOPE SOURCE INVENTORY

6/19/00

Authorized User	Source Number	Isotope	Physical Form	Description	Total Act. mCi	Amount Used mCi	Act. Today mCi
Doyle , Dwayne							
	060-001-00	Co-60	Sealed		1.61E+06	0.00E+00	4.22E+04
	060-002-00	Co-60	Sealed		9.95E+07	0.00E+00	2.87E+06
	060-003-00	Co-60	Sealed		7.35E+07	0.00E+00	6.56E+06
	060-004-00	Co-60	Sealed	N/A	3.57E+08	0.00E+00	5.71E+07
	060-005-00	Co-60	Sealed	N/A	2.93E+08	0.00E+00	4.69E+07
Co-60 Total (mCi):							1.13E+08
	060-009-00	Pu-239	Sealed	PuBe (15.96 g)	9.91E+02	0.00E+00	9.90E+02
	060-010-00	Pu-239	Sealed	PuBe (15.96 g)	9.91E+02	0.00E+00	9.90E+02
	060-011-00	Pu-239	Sealed	PuBe (15.99 g)	9.93E+02	0.00E+00	9.92E+02
	060-012-00	Pu-239	Sealed	PuBe (15.99 g)	9.93E+02	0.00E+00	9.92E+02
	060-013-00	Pu-239	Sealed	PuBe (16.0 g)	9.94E+02	0.00E+00	9.93E+02
Pu-239 Total (mCi):							4.96E+03
	060-008-00	U-Nat	Sealed	2495 kg (1382 slugs)	1.72E+03	0.00E+00	1.72E+03
U-Nat Total (mCi):							1.72E+03



Leak Test Reports

Alpha LEAK TEST Inventory

6/19/00

Sample	Source Number	Isotope	Half Life (Days)	Assay Date	Physical Form	Description	Total Act. (mCi)	Act. Today (mCi)	Building	Storage Room	Authorized User
1	004-018-00	Ra-226	5.84E+05	8/1/77	Sealed		10	9.90E+00	Carnegie	Vault	Becker
2	012-008-00	Am-241	1.58E+05	12/5/75	Sealed		0.0131	1.26E-02	Daniel	B-81	Cox
3	018-026-00	Pu-239	8.81E+06	9/28/62	Sealed		5000	4.99E+03	Carnegie	Vault	Gray
4	040-001-00	Ra-226	5.84E+05	10/5/60	Sealed	Calibration Source	1	9.83E-01	Carnegie	Vault	Schultz
5	040-003-00	Cf-252	9.64E+02	10/4/82	Sealed	N/A	1.07	1.02E-02	Carnegie	Vault	Schultz
6	040-004-00	Cf-252	9.64E+02	12/15/82	Sealed	N/A	5.36	5.39E-02	Carnegie	Vault	Schultz
7	040-005-00	Cf-252	9.64E+02	12/15/82	Sealed	N/A	5.36	5.39E-02	Carnegie	Vault	Schultz
8	041-001-00	Cf-252	9.64E+02	8/25/95	Sealed	Cf2O3	70	1.97E+01	Carnegie	Mezzanine	Shaefer
9	041-008-00	U-235	2.57E+11	10/23/63	Sealed	17 envelopes; 22 g	0.0462	4.62E-02	Carnegie	Vault	Shaefer
10	041-009-00	U-Nat	1.62E+12	10/1/73	Sealed	1301 NU-plugs(2500.93Kg)	1728.3	1.73E+03	Carnegie	RCZ	Shaefer
11	043-002-00	Am-241	1.58E+05	7/1/89	Sealed		10	9.83E+00	Neely	Bldg. 3	Smith
12	043-003-00	Cm-244	6.61E+03	7/1/89	Sealed		30	1.97E+01	Neely	Bldg. 3	Smith
13	056-002-00	Am-241	1.58E+05	4/8/87	Sealed	Am-Be	50	4.90E+01	Carnegie	G-112	Wiggins
14	060-008-00	U-Nat	1.62E+12	9/1/61	Sealed	2495 kg (1382 slugs)	1724.1	1.72E+03	Carnegie	156	Doyle
15	060-009-00	Pu-239	8.81E+06	9/1/61	Sealed	PuBe (15.96 g)	991	9.90E+02	Carnegie	Vault	Doyle
16	060-010-00	Pu-239	8.81E+06	9/1/61	Sealed	PuBe (15.96 g)	991	9.90E+02	Carnegie	Vault	Doyle
17	060-011-00	Pu-239	8.81E+06	9/1/61	Sealed	PuBe (15.99 g)	993	9.92E+02	Carnegie	Vault	Doyle
18	060-012-00	Pu-239	8.81E+06	9/1/61	Sealed	PuBe (15.99 g)	993	9.92E+02	Carnegie	Vault	Doyle
19	060-013-00	Pu-239	8.81E+06	9/1/61	Sealed	PuBe (16.0 g)	994	9.93E+02	Carnegie	Vault	Doyle
20	078-001-00	Cf-249	1.28E+05	1/16/70	Sealed		0.016	1.51E-02	Carnegie	G-112	Storage
21	078-007-00	Np-237	7.82E+08	2/26/65	Sealed		0.353	3.53E-01	Carnegie	Vault	Storage
22	078-008-00	Pu-239	8.81E+06	2/26/65	Sealed	5 gm	307	3.07E+02	Carnegie	Vault	Storage
23	078-009-00	Ra-226	5.84E+05	11/5/71	Sealed	Inside guage	0.02	1.98E-02	Carnegie	G-112	Storage



RS Solutions Database

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Radioactive Waste

Packages

Status:

Form:

AU:

Package Year:

Class:

Containers

Status:

Form:

Disposal Year:

Sanitary Discharge

Select DischargeID:

Decay In Storage

Select Disposal Date:

Waste Pick-up Log

Waste Summary

Help



Rad Waste Package Logs

Radioactive Waste Package Log

Package ID:	W1998-006-05	Date:	6/30/98								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>S-35</td><td>006-158-00</td><td colspan="2">0.02</td></tr></table>				Isotope	Source Number	Activity (mCi)		S-35	006-158-00	0.02	
Isotope	Source Number	Activity (mCi)									
S-35	006-158-00	0.02									

Package ID:	W1999-006-06	Date:	8/ 4/99								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>S-35</td><td>006-163-00</td><td colspan="2">0.02</td></tr></table>				Isotope	Source Number	Activity (mCi)		S-35	006-163-00	0.02	
Isotope	Source Number	Activity (mCi)									
S-35	006-163-00	0.02									

Package ID:	W1998-006-06	Date:	6/30/98								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>S-35</td><td>006-157-00</td><td colspan="2">0.01</td></tr></table>				Isotope	Source Number	Activity (mCi)		S-35	006-157-00	0.01	
Isotope	Source Number	Activity (mCi)									
S-35	006-157-00	0.01									

Package ID:	W1999-006-07	Date:	8/ 4/99								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>S-35</td><td>006-165-00</td><td colspan="2">0.01</td></tr></table>				Isotope	Source Number	Activity (mCi)		S-35	006-165-00	0.01	
Isotope	Source Number	Activity (mCi)									
S-35	006-165-00	0.01									

Package ID:	W1999-006-04	Date:	8/ 4/99								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>H-3</td><td>006-149-00</td><td colspan="2">0.8</td></tr></table>				Isotope	Source Number	Activity (mCi)		H-3	006-149-00	0.8	
Isotope	Source Number	Activity (mCi)									
H-3	006-149-00	0.8									

Package ID:	W1999-006-08	Date:	8/ 4/99												
AU:	Bradley, Jung	Form:	Liquid												
Disposal Cont. ID:	A1998-07	Date:													
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>S-35</td><td>006-163-00</td><td colspan="2">0.02</td></tr><tr><td>S-35</td><td>006-164-00</td><td colspan="2">0.01</td></tr></table>				Isotope	Source Number	Activity (mCi)		S-35	006-163-00	0.02		S-35	006-164-00	0.01	
Isotope	Source Number	Activity (mCi)													
S-35	006-163-00	0.02													
S-35	006-164-00	0.01													

Package ID:	W1999-006-05	Date:	8/ 4/99								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	A1998-07	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>Ca-45</td><td></td><td colspan="2">0.04</td></tr></table>				Isotope	Source Number	Activity (mCi)		Ca-45		0.04	
Isotope	Source Number	Activity (mCi)									
Ca-45		0.04									

Package ID:	W1999-006-09	Date:	8/ 4/99								
AU:	Bradley, Jung	Form:	Liquid								
Disposal Cont. ID:	DIS	Date:									
<table><tr><th>Isotope</th><th>Source Number</th><th colspan="2">Activity (mCi)</th></tr><tr><td>P-32</td><td></td><td colspan="2">0.08</td></tr></table>				Isotope	Source Number	Activity (mCi)		P-32		0.08	
Isotope	Source Number	Activity (mCi)									
P-32		0.08									



Rad Waste Container Reports

Goddard Space
Flight Center

Rad Waste Shipping Containers

Container ID: A199604 Volume: 30 gallons (3.9 cubic feet)
Shipment Date 4/1/99 Form: Aqueous
Contamination Survey Done: Yes Dose Rate Survey (mSv/hr): 0.0005 Transport Index: N/A

Package ID	Date	Authorized User			
W1996-004-02	10/23/96	Becker, Bernd	W1996-014-05	8/29/96	Ellis, Athanassios
W1996-020-07	5/21/96	Harris, Cheng	W1996-039-03	10/16/96	Rupp, Michael
W1996-039-04	10/16/96	Rupp, Michael	W1996-039-05	10/16/96	Rupp, Michael
W1996-078-01	6/19/96	Storage, Interim	W1996-078-02	6/21/96	Storage, Interim
W1996-078-03	10/31/96	Storage, Interim	W1997-006-03	7/10/97	Bradley, Jung
W1997-006-09	9/11/97	Bradley, Jung	W1997-006-10	9/11/97	Bradley, Jung
W1997-008-01	1/30/97	Caldwell, Richard	W1997-008-02	1/30/97	Caldwell, Richard
W1997-008-03	1/30/97	Caldwell, Richard	W1997-008-04	1/30/97	Caldwell, Richard
W1997-008-05	1/30/97	Caldwell, Richard	W1997-008-06	1/30/97	Caldwell, Richard
W1997-008-07	1/30/97	Caldwell, Richard	W1997-008-08	1/30/97	Caldwell, Richard
W1997-008-12	8/13/97	Caldwell, Richard	W1997-008-14	11/12/97	Caldwell, Richard
W1997-014-01	5/1/97	Ellis, Athanassios	W1997-019-01	7/16/97	Haich, Robert
W1997-050-01	7/30/97	Valentin, Robert	W1998-006-01	2/5/98	Bradley, Jung
W1998-006-02	2/5/98	Bradley, Jung	W1998-006-03	2/5/98	Bradley, Jung
W1998-014-02	4/16/98	Ellis, Athanassios	W1998-050-03	3/6/98	Valentin, Robert
W1998-050-04	3/6/98	Valentin, Robert	W1998-050-06	5/20/98	Valentin, Robert
W1998-050-07	5/20/98	Valentin, Robert			

Isotope	Activity (mCi)	Activity (MBq)
C-14	8.53E-01	3.16E+01
Co-60	1.00E-04	3.70E-03
Cr-51	6.42E+00	2.38E+02
Eu-154	2.39E-04	8.84E-03
Eu-155	7.70E-05	2.85E-03
H-3	5.21E+00	1.93E+02
I-125	2.20E-02	8.14E-01
Kr-85	3.00E-02	1.11E+00
Ni-63	1.00E-01	3.70E+00



Decay In Storage Reports

Radioactive Waste - Decay In Storage

Form: Liquid

DIS Date	Receipt Date	PackageID	Isotope	Initial Activity (mCi)	Current Activity (mCi)	DIS DisposalDate
9/24/99	5/5/99	W1999-990-01	P-32	3.60E+00	7.57E-09	
9/24/99	5/5/99	W1999-990-02	P-32	2.25E+00	4.73E-09	
10/29/99	6/9/99	W1999-990-19	P-32	2.55E-01	2.93E-09	
11/14/99	6/25/99	W1999-990-20	P-32	2.10E-01	5.24E-09	
12/4/99	7/15/99	W1999-990-04	P-32	9.50E-01	6.25E-08	
12/11/99	7/22/99	W1999-990-23	P-32	2.75E-01	2.54E-08	
12/17/99	7/28/99	W1999-990-01	P-32	3.00E-01	3.71E-08	
12/24/99	8/4/99	W1999-990-09	P-32	8.00E-02	1.39E-08	
12/24/99	8/4/99	W1999-990-10	P-32	9.00E-02	1.56E-08	
12/31/99	8/11/99	W1999-990-30	P-32	3.85E-01	9.38E-08	
2/4/00	9/15/99	W1999-990-36	P-32	2.60E-01	3.46E-07	
2/6/00	5/5/99	W1999-990-04	Cr-51	2.67E+00	8.93E-05	
2/25/00	10/6/99	W1999-990-39	P-32	2.20E-01	8.10E-07	
2/28/00	10/9/99	W1999-990-02	P-32	1.89E+00	8.05E-06	
4/17/00	7/15/99	W1999-990-05	Cr-51	3.34E+00	6.59E-04	



Rad Waste Pickup Log

RadWaste Pickup Log

AU Name: Anderson, Roger

<i>Lab</i>	<i>Date Pick-up requested</i>	<i>Scheduled Pick-up</i>	<i>Solid Containers</i>	<i>Liquid Containers</i>	<i>LSC Vials</i>	<i>Comment</i>
Commander 213	4/25/00	5/10/00	1	0	0	

AU Name: Becker, Bernd

<i>Lab</i>	<i>Date Pick-up requested</i>	<i>Scheduled Pick-up</i>	<i>Solid Containers</i>	<i>Liquid Containers</i>	<i>LSC Vials</i>	<i>Comment</i>
GCATT G-1,2	4/28/00	5/10/00	2	0	1	

AU Name: Schultz, Edgar

<i>Lab</i>	<i>Date Pick-up requested</i>	<i>Scheduled Pick-up</i>	<i>Solid Containers</i>	<i>Liquid Containers</i>	<i>LSC Vials</i>	<i>Comment</i>
Carnegie 147	4/27/00	5/10/00	2	1	1	



Sewer Discharge Reports

Sanitary Discharge

DischargeID: 2000-01

$$\text{Sum of Fractions} = \sum_i \frac{n (\text{Isotope Concentration})_i \mu\text{Ci} / \text{ml}}{(\text{Release Limit})_i \mu\text{Ci} / \text{ml}} \quad \text{where : } n = \text{number of radionuclides}$$

Sum of Fractions = 0.543

Note: Sum of Fractions must be less than one (1) to authorize release. Calculations must be reviewed before allowing release to the sewer.

Note: Total Yearly Discharge: H-3 < 5 Ci, C-14 < 1 Ci
All other Isotopes < 1 Ci

Total Daily Discharge in μCi

<u>C-14</u>	<u>H-3</u>	<u>All Other Isotopes</u>
0.10	5.77	0.04

Total Yearly Discharge in μCi

<u>Year</u>	<u>C-14</u>	<u>H-3</u>	<u>All Other Isotopes</u>
2000	0.11	8.61	0.10

Date: 3 / 8 / 00

<u>Isotopes</u>	<u>Concentration $\mu\text{Ci/ml}$</u>	<u>Volume Discharged (gal)</u>	<u>Total Discharge μCi</u>
C-14	8.50E-07	2.0	0.01
C-14	8.50E-06	3.0	0.10
H-3	1.00E-05	1.5	0.06
H-3	7.55E-04	2.0	5.72
I-125	8.50E-06	1.0	0.03
P-32	9.00E-07	1.0	0.00



RS Solutions Database

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X-Ray Machines



X-Ray Machine Inventory

Status: **Active**
Inactive
All

Building:

Type:

AU:


 

Clear Entries


View Selected X-Ray Machine

List: ☒ Active ☐ Inactive ☐ All


Select ID:





Add New X-Ray Machine



Help



Exit



X-Ray Device Inventory

X-Ray Machines

ID #	AU	Type	Make	Model	S/N	Location	Status	Date
12	Latham, Yolande	EM	Hitachi		123467	Burge 142	Active	9/20/99
24	Ford, Stuart	XRD	Philips	PW1800	123479	Burge 153	Active	9/27/99
42	Latham, Yolande	EM	Hitachi	HF-2000	123498	Burge 144	Active	9/20/99
43	Latham, Yolande	EM	JEOL	4000EX	123499	Burge 147	Active	9/20/99
44	Ford, Stuart	XRD	Bede Scientific	QC2A	123500	Burge 153	Active	9/27/99
51	Latham, Yolande	EM	JEOL	100C	123507	Burge 132A	Active	9/20/99



RS Solutions Database

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Laboratories

Laboratory Information

Status:

Survey:

Building:

Type:

Laboratory Audits

Room:

Add New Audit

Audit Checklists

(Leave Room Blank to Print All)

With Map Without Map

General Information

Add New Edit

Department

Building

Laboratory

Help Exit



Lab Location Lists

Goddard Space
Flight Center

Campus Laboratories - Active

Building: Armstrong

Room	Status	Lab Type	Phone #	Authorized User(s)		
1231	Active	Neighborhood	(404) 555-0680	Fu-chung, F.		
1405	Active	Neighborhood	(404) 555-3240	Ellis, A.		
1420	Active	Enclosed	(404) 555-0509	Wasowski, Y	Downs, C.	Hinton, M.
				Johansson, A.	Cinader, H.	Abernathy, J.
				Anderson, R.	Bradley, J.	Ellis, A.
				Harris, C.		
2205A	Active	Enclosed	(404) 555-1323	Bradley, J.		
2205B	Active	Enclosed	(404) 555-1312	Elliot, N.	Cinader, H.	Gaines, J.
2334	Active	Enclosed	() 555-	Elliot, N.		
2402	Active	Enclosed	(404) 555-0509	Hinton, M.		
2402A	Active	Neighborhood	(404) 555-0509	Hinton, M.		
2403A	Active	Enclosed	(404) 555-0509	Valentin, R.	Johansson, A.	
3128	Active	Neighborhood	() 555-	Downs, C.		
3130	Active	Neighborhood	() 555-	Downs, C.		
3132	Active	Neighborhood	() 555-	Abernathy, J.		

Building: Burge

Room	Status	Lab Type	Phone #	Authorized User(s)		
363	Active	Enclosed	() 555-	Garner, B.		

Building: Carnegie

Room	Status	Lab Type	Phone #	Authorized User(s)		
G-112	Active	Enclosed	() 555-	Wiggins, J.	Storage, I.	Adams, M.
				Carr, M.	Dickson, C.	Gray, R.
RadVan	Active	Enclosed	() 555-	Gray, R.		

Building: Daniel

Room	Status	Lab Type	Phone #	Authorized User(s)		
1-33N	Active	Enclosed	(404) 555-4063	Ravenel, G.		
1-44	Active	Enclosed	(404) 555-4063	Ravenel, G.		
B-81	Active	Enclosed	() 555-	Cox, R.	Glass, L.	



Lab Audit Checklists

Goddard Space
Flight Center

Laboratory Audit Checklist

Description

Location: Armstrong 3132 Lab Type: Neighborhood

AU: Abernathy, James

Authorized Isotopes C-14 H-3

Radiation Workers: (Must have attended Radiation Safety Training Lecture)

Kahn, Chih-Min Pattanaik, James

Survey Meter: Eberline E-120 S/N: A664X

Calibration Due Date: 4/28/01 Battery Check: OK / Low / N/A

Audit Items

Proper Postings (Notice to Employees, Doors, Fridges, etc.):	<u>Yes / No</u>	Personnel Dosimeters Worn and Stored Appropriately:	<u>Yes / No / NA</u>
Materials Labelled Properly:	<u>Yes / No</u>	No Food or Drink in Room	<u>Yes / No</u>
Surveys Performed and Documented Appropriately:	<u>Yes / No / NA</u>	Appropriate Waste Storage:	<u>Yes / No / N/A</u>
Appropriate Security:	<u>Yes / No</u>	Appropriate Shielding:	<u>Yes / No / N/A</u>

Comments / Violations

Level

_____	_____
_____	_____
_____	_____
_____	_____

Previous Violations (Past Year)

<u>Date</u>	<u>Level</u>	<u>Description</u>
<u>4/1/00</u>	<u>1</u>	<u>Abernathy, James - Lab personnel were found eating and drinking in the laboratory</u>

Performed By: _____ Date: _____

Reviewed By: _____ Date: _____



RS Solutions Database

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Radiation Detection Equipment

Equipment Inventory

Status:

Building:

Type:

AU:

Group:

View Selected Equipment

Serial Number:

Add New

Instrument Daily Source Check

Select Instrument:

Monthly Calibration List

Group:

Help

Exit



Equipment Inventory

Radiation Detection Equipment

Status	Cal. Due	Type	Instrument	Serial #	Authorized User	Location	Last Cal.
Active	3/8/01	GM	Eberline E-120	42481	Ghali, Agaram	Folk 4340	3/31/00
Active	3/8/01	GM	Eberline RM-14	185	Gray, Rod	Carnegie 147	3/8/00
Active	3/10/01	GM	Dosimeter 3007A	1047	Ravenel, Gary	Daniel 1-44	3/31/00
Active	3/30/01	GM	Eberline PRM-6	9533-226	Henderson, Chris	Carnegie G-122	3/31/00
Active	3/30/01	GM	Ludlum 2	107187	Gray, Rod	Carnegie 147	3/30/00



Calibration Schedules

Equipment Calibration Work Order

Group 4

Next Cal. Due	Last Cal.	Instrument	Manufacturer	Model	Serial Number	Status
4/15/01	5/8/00	GM	Victoreen	493	1604-A	Active
4/28/01	5/1/00	GM	Eberline	E-120	A664X	Active
4/30/01	5/1/00	GM	Ludlum	2	2008	Active
4/30/01	5/2/00	GM	Ludlum	3	9505-012	Active
4/9/99	4/9/98	Alpha/Beta	Eberline	SHP-380AB	1090198	Out of Service
4/20/99	4/20/98	GM	Eberline	SHP-360	2737	Out of Service



RS Solutions Database

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Miscellaneous

Non-Rad Workers

☒ Active ☐ Inactive ☐ All

Select Worker:

View / Edit De-Activate

Add New

View Workers List

Print Workers List

Emergency Call List

View Print Add / Edit

RAM License

United State University

License Number

US-114277-F10

Issued: 6/28/00 Expires: 6/30/05

Limits

Regulatory Inspections

Select Inspection Number

Edit Print Add New

Add/Edit Violations

Print List of Inspections

View Table Data

Program Summary

Unresolved Violations

Help

Exit



NRC Inspections

Regulatory Inspections

<i>Inspection Number</i>	<i>Inspection Date</i>	<i>Comments</i>
2000-01	2/11/00	First inspection of the year. Office was sited for two violations

List of Violations

<i>Violation Number</i>	<i>Violation Level</i>	<i>Comments</i>	<i>Corrective Action</i>	<i>Resolved</i>
1	IV	Laboratory door open. Food found in trash can. Sources not properly secured	RSO Informed authorized user. Copy of letter in file. Refresher training to be given to all rad workers.	<input checked="" type="checkbox"/>
2	III	Alpha Leak Test for the last quarter of year 1999 was not performed on time.	Problem in the work order system was corrected	<input type="checkbox"/>



Emergency Call List

Emergency Call List

Name	PhoneNumber
Fire	(911) - x
Nuclear Regulatory Commission	(800) 888-1234 x
Police	(911) - x
Public Relations	(404) 555-1542 x3251
Assistant Radiation Safety Officer	(404) 555-1151 x
Radiation Safety Officer	(404) 555-3605 x



Program Summary

Program Summary

United States University

Employees:

Authorized Users: **68**
Radiation Workers **433**
Non-Rad Workers: **1**

Dosimetry:

Badges: **190**
Accounts: **2**
Series: **18**

RAM Orders:

Recd. This Year: **34**
Recd. This Month: **2**
Awaiting Receipt: **4**

Equipment:

Detection Devices: **88**
X-Ray Machines: **23**

Laboratories:

Departments: **26**
Laboratories: **80**

Rad Waste:

Packages(Decay Storage): **47**
Waste Containers on hand: **5**
Containers shipped this year:

RAM Inventory Summary

<i>Isotope</i>	<i>Physical Form</i>	<i>Current Activity (mCi)</i>	<i>Authorized Limits (mCi)</i>	<i>License Limits (mCi)</i>	<i>Δ (mCi)</i>
Am-241	Liquid	9.21E-02	1.00E-03	1.10E+03	1.10E+03
Am-241	Sealed	1.64E+02	1.31E-02	1.00E+04	1.00E+04
Am-241	Solid	1.52E-04	1.00E-03	1.10E+03	1.10E+03
Am-243	Liquid	5.00E-06	1.00E-05	4.00E+02	4.00E+02
Ba-133	Liquid	2.72E-02	1.00E-01	4.00E+03	4.00E+03
Ba-133	Sealed	3.97E-03	6.00E-03	4.00E+03	4.00E+03
Bi-207	Sealed	4.01E-03	1.00E-02	4.00E+03	4.00E+03
Bi-207	Solid	9.69E-03	1.00E-01	4.00E+03	4.00E+03
C-14	Liquid	1.03E+00	1.00E+00	4.00E+03	4.00E+03
C-14	Sealed	1.67E-04	1.00E-02	4.00E+03	4.00E+03
C-14	Solid	4.23E+00	1.10E+00	4.00E+03	4.00E+03
Cd-109	Sealed	1.93E+00	1.00E-02	4.00E+03	4.00E+03



Any questions?

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